



***4th Annual Indoor Air Quality  
Tools for Schools  
National Symposium***



# **School Security – Post 9/11 Planning For School District Security**



***JAED Facility Solutions  
300 Water Street  
Wilmington, Delaware***

***October 27, 2003***





# Team / Agenda



- Team – JAED Facility Solutions
  - James A. Hutchison, III, P.E.
  - Pamela J. Babuca, ASID, IFMA
  - Andrew LaRowe, CFM
- Agenda
  - School District Security Tools- Latest Trends
  - Emergency Preparedness for Schools
  - Connecting IAQ & Emergency Preparedness
  - District & Community Preparedness – Opportunities for Cooperation
  - Federal Preparedness Resources
  - District Preparedness Case Studies

# District Security - Latest Trends



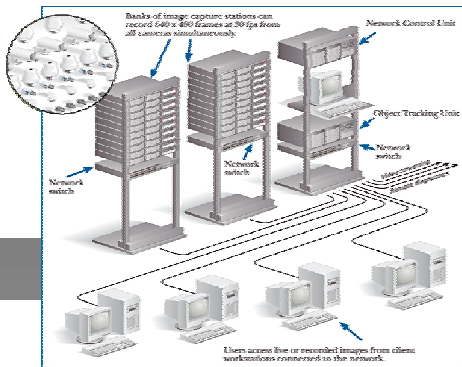
- Security Technology Tools
  - CCTV
  - Access Control
  - Intrusion Systems
- Web-Based Security Tools
  - Information Servers
  - CAD Servers
  - Low Voltage Security System Interfaces
  - System Manufacturer Interfaces
  - Multi-Platform Interfaces



# District Security - Latest Trends



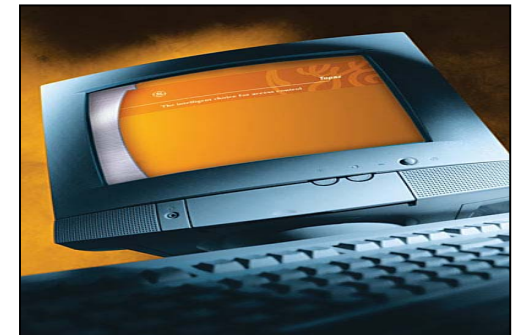
- Security Technology Tools
  - CCTV System
    - Enterprise Digital Video Surveillance
    - Intelligent Video
    - Human detection system
      - Distinguishes Between Background Motion And Relevant Human Motion.
      - Performs Reliably In Highly Dynamic Environments.
      - Minimizes False Alarms.
      - Improves Monitoring Efficiency



# District Security - Latest Trends



- Security Technology Tools
  - Access Control System - *Applications*
    - Gates, Vehicle Lots, Tool Equipment Storage
    - Access To Control Rooms And Offices, Communications Sites And Other Secure Sites



# District Security - Latest Trends



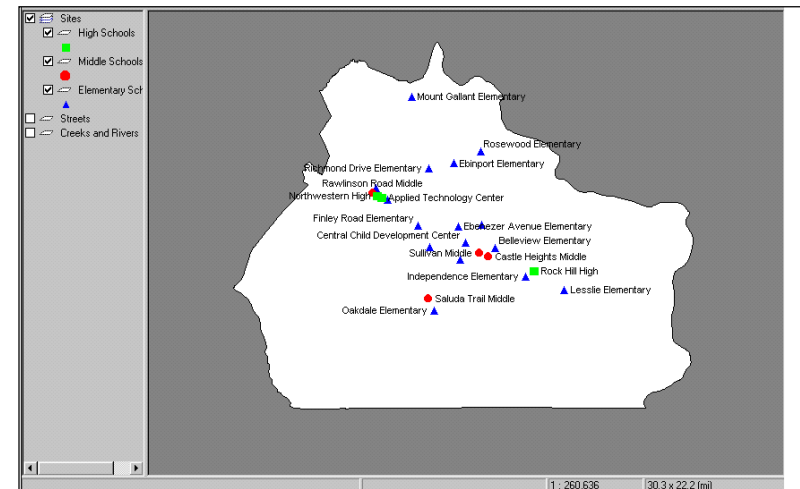
- Security Technology Tools
  - Intrusion System
    - Hardwire Or Hybrid Wireless Security Control Panel
    - Operate And Check System Status Remotely Via Phone
    - Built-in Keypad And 2-way Voice Speaker



# District Security - Latest Trends



- Web-Based Security Tools
  - Information Servers
  - CAD Servers
  - Low Voltage Security System Interfaces
  - System Manufacturer Interfaces
  - Multi-Platform Interfaces



# District Security - Latest Trends



- Web-Based Security Tools
  - Desired Features:
    - Web-native
    - GIS Based (Geographic Information System)
    - Graphical User Interface (GUI) For CCTV
    - Cad-driven Viewer To See Maps & Plans
    - Stringent Security Standards

“Enhances School District / Community Safety And Security Partnering”

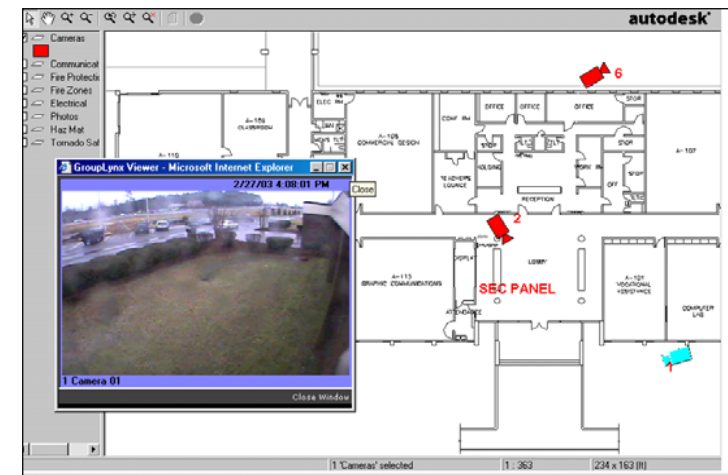




# District Security - Latest Trends



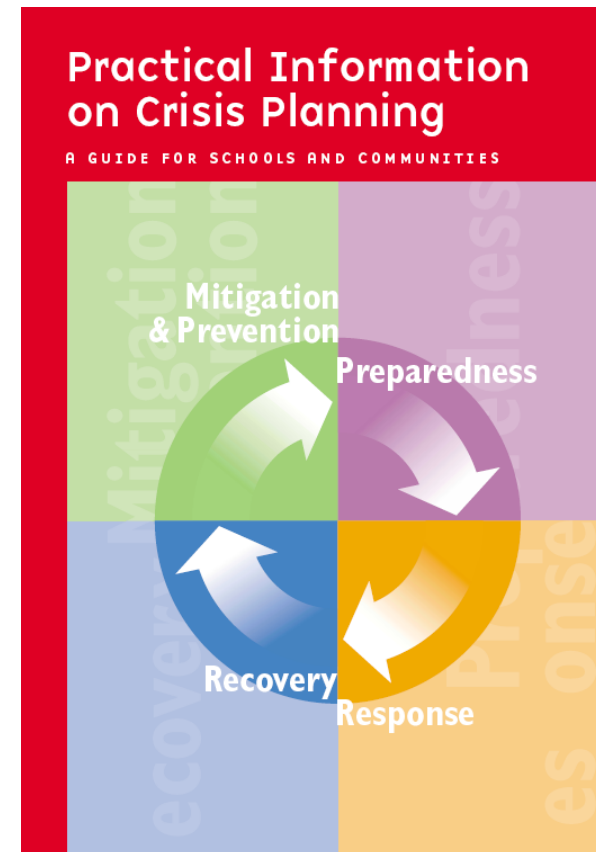
- Web-based Security Tools
  - Multiple “Module” Possibilities
    - Remote Access To CCTV System
    - Digital Photography Links
    - Hazardous Materials Interface
    - Fire And Safety Site And Floor Plans
    - Emergency Preparedness Documentation
  - Emergency Exit Routes
  - Tornado Safety Zone / Shelter
  - Links To Other Low-voltage Systems
    - Fire Alarm Systems
    - Card Access Systems
    - Intrusion Systems
    - Communication Systems



# Emergency Preparedness for Schools



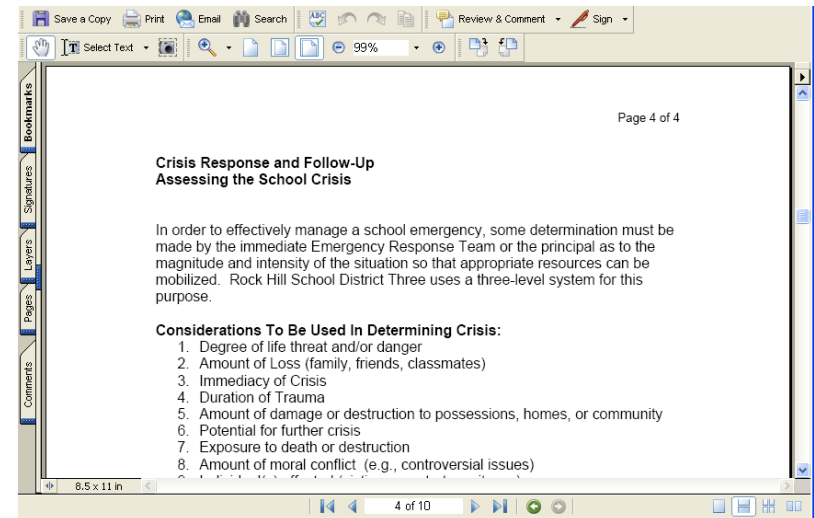
- Emergency Planning For Schools - Components
  - Emergency Plans
  - Protection / Mitigation
  - Preparedness
  - Response
  - Recovery



# Emergency Preparedness for Schools



- Emergency Plans
  - Develop A Crisis Plan
    - Include Community Agencies
    - Address Traditional Crises
      - Fire
      - Shootings
      - Accidents
    - Non-traditional Crises
      - Biological
      - Radiological
      - Chemical
      - Terrorist
  - Review Your Crisis Plan
  - Train, Practice, Drill
  - Address Unique Needs Of Individual Schools



# Emergency Preparedness for Schools



- Protection / Mitigation
  - Conduct An Assessment Of Each School
    - Identify High Risk Factors (Ex. - Proximity To Sources Of Hazardous Materials)
    - Develop Plan To Reduce Risk (Ex. – An Evacuation Plan)
  - Partner With Businesses And Factories Nearby To Insure Alignment Of Crisis Plans
  - Implement A Process To Access And Egress To The School
  - Review Traffic Patterns
  - Review Landscaping

# Emergency Preparedness for Schools



- Preparedness
  - Have Site And Building Plans Readily Available
  - Share Plans With Emergency Responders
  - Plan For Multiple Evacuation Routes And Rallying Points
  - Practice Responding On A Regular Basis
  - Inspect School-owned Emergency Equipment
  - Develop A Student Discharge Plan
  - Develop A Parental Communication System
  - Cultivate Media Relationships
  - Strategize Information Sharing With Law Enforcement Officials

# Emergency Preparedness for Schools



- Response
  - Develop A Command Structure For Response
  - Review And Approve Roles For
    - Educators
    - Law Enforcement Officials
    - Fire Officials
    - Other First Responders
- Recovery
  - Return To The Business Of Teaching And Learning
  - Identify And Approve A Team Of Credentialed Mental Health Workers
  - Ensure Adequate Training For Team
  - Notify Parents Of Recovery Plan

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# Connecting IAQ & Preparedness



- IAQ Management Plan
  - Logistics/Benefits
  - Activation
  - Steps
    - Assess Current Status
    - Perform Repairs And Upgrades
    - Final Steps
  - Effective Communication
- Resolving IAQ problems
  - Diagnosing IAQ Problems
  - Solving IAQ problems



## Ventilation Checklist & Log

Schools use a variety of methods for ventilating the building with outdoor air: 1) mechanically-based systems such as unit ventilators, central HVAC systems, and control exhaust systems, and; 2) passive systems that rely on operable windows, air leaks, wind, and the stack effect (the tendency of warm air to rise).

The majority of the Ventilation Checklist Log activities apply mostly to mechanical ventilation systems, and are designed to accomplish two functions:

- Ensure that the ventilation system is clean, and
- Ensure that an adequate amount of outdoor air is supplied to occupied areas

Many of these activities should be performed by individuals with appropriate training in mechanical systems and safety procedures. Most activities can be performed with basic maintenance tools, but Activity 22 will require airflow measurement equipment that you may not have. The section *How to Measure Airflow*, at the back of this Checklist, describes the type of equipment used to measure airflow. The IAQ Coordinator has information on how this equipment can be obtained (Appendix C of the Coordinator's Guide). Make an effort to obtain this equipment when conducting Activity 22 to ensure adequate amount of outdoor air quality, as airflow can only be measured with equipment that can

you're getting the proper amount of outdoor air (visual inspection or feeling for air movement is not sufficient).

Activities 17-21 can be applied to passive ventilation systems. For activities that do not apply, place a "NA" in the date column of the Ventilation Log.

Your school most likely has multiple units and systems, so be sure to perform the activities and complete the Ventilation Log for each unit. The activities are listed in a purposeful order to prevent having to repeat activities for a given unit as the inspection progresses. The following is a recommended process for saving time in performing the activities:

### Activities 1-3

Perform these activities for all outdoor air intakes while outside the building, and mark the results on the Ventilation Log for each unit.

### Activities 4-12

Perform these activities as a set on each ventilation unit while you're in the room and the unit is open.

### Activities 13-16

Perform these ventilation control system activities as required by your

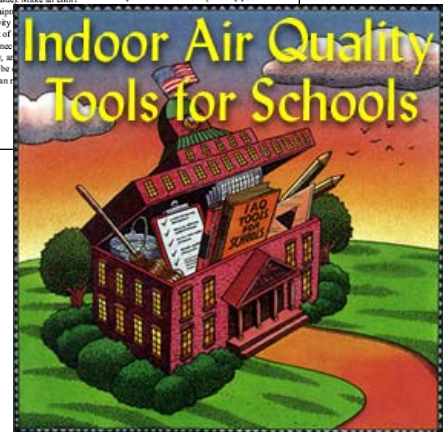
**This checklist discusses eight major topic areas:**

Outdoor Air Intakes  
System Cleanliness  
System Controls  
Air Distribution  
Exhaust Systems  
Quantity of Outdoor Air  
Adequacy of Outdoor Air Supply  
How to Measure Air Flow

**Instructions:**

1. Read the AED Background.
2. Important! Read the Ventilation Activity explanations accompanying this checklist (pages 5-15).
3. Make one copy of the Ventilation Log (page 3-4) for each ventilation unit in your school.
4. Complete each activity for each ventilation unit and note the status of each activity on the Ventilation Log.
5. Return the Ventilation Logs to the IAQ Coordinator and keep copies for future reference.

1 of 16



IAQ Coordinator's Guide



# Connecting IAQ & Preparedness

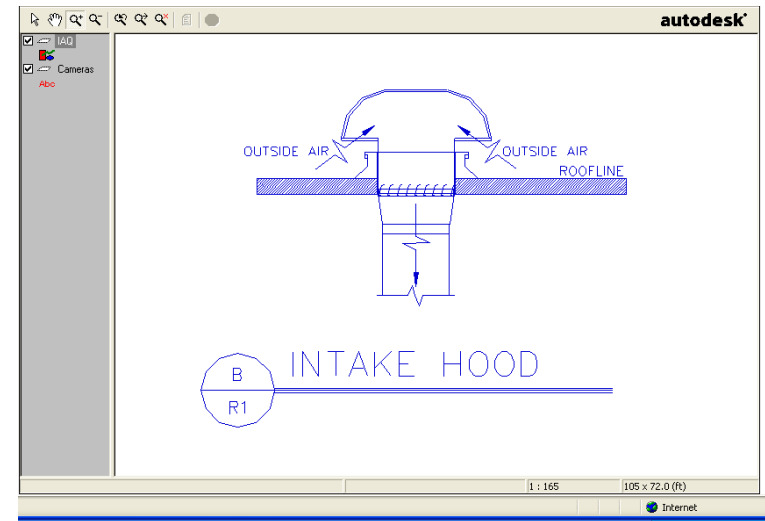


- Similarities Between IAQ Management And Emergency Preparedness
  - Reliance On Facility Knowledge
  - Ready Access To Facility Information Required
  - Drawing And System Information Requirements
  - HVAC System Information
    - Outside Air Intakes
    - Major Air Handling Units
  - Ability To Share Information Across Departmental And Outside Of District Boundaries

# Connecting IAQ & Preparedness



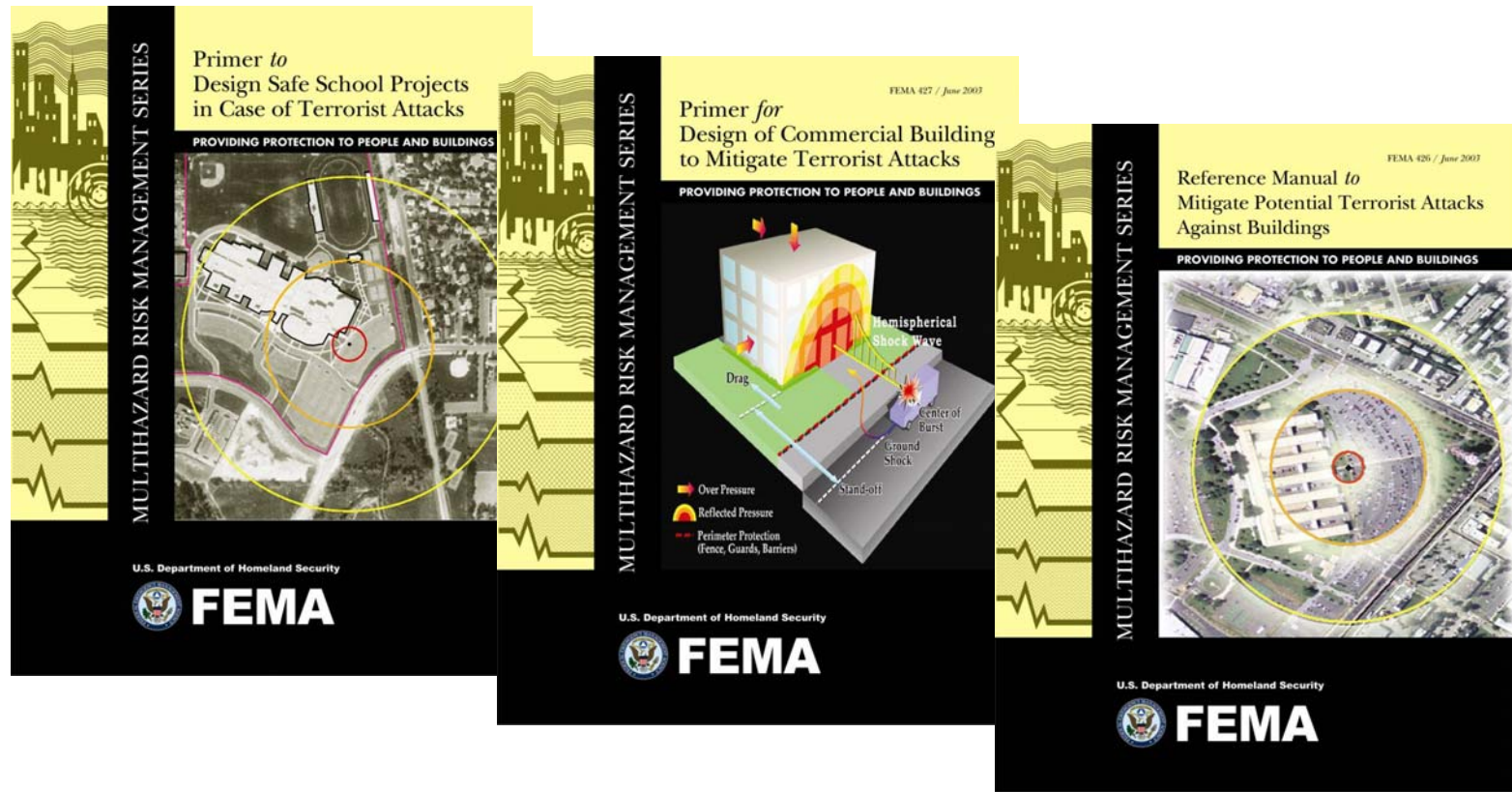
- Web-Based Solutions
  - Similar Web-based Information System Can Ideally Be Employed For IAQ Management
  - Information Served
    - Outdoor Air Intakes
    - System Information
    - Air Handling Unit Layouts
    - IAQ Checklists



# Federal Preparedness Plans



- FEMA resources



# Federal Preparedness Plans



## • Other Federal Agencies

**EMERGENCY PLANNING FOR AMERICA'S SCHOOLS**

The U.S. Department of Education is working with school safety experts from around the United States to make available to schools a model emergency response and crisis management plan. The model will be available in March 2003, but excerpts are available below. For more information, visit [www.ed.gov/emergencyplan/](http://www.ed.gov/emergencyplan/).

**Emergency Plans**

If you don't have a school crisis plan in partnership with public safety agencies, including law enforcement and fire, health, mental health and local emergency preparedness agencies, develop one that addresses traditional crises and emergencies such as fires, school shootings and accidents, biological, radiological, chemical and other terrorist activities.

If you do have a crisis plan, review it. Ensure that it addresses issues related to terrorism, biological, radiological and chemical attacks.

Train, practice and drill. Documents on a shelf don't work in a crisis.

Ensure that your school district crisis plan addresses the unique circumstances and needs of individual schools. Districts are encouraged to develop a separate plan for each school building. Each crisis plan should address four major areas—prevention/mitigation, preparedness, response and recovery.

Actions that schools should take under each of these areas include:

**Prevention/Mitigation:**

- Conduct an assessment of each school building. Identify those factors that put the building and staff at greater risk, such as proximity to rail tracks that regularly transport hazardous materials or facilities that produce highly toxic material or propane gas tanks, and develop a plan to reduce the risk. This can include plans to evacuate students away from these areas in times of crisis, to reposition propane tanks or other hazardous materials away from school buildings.
- Work with businesses and factories in close proximity to the school to ensure that the school plan is coordinated with their crisis plans.
- Ensure a process is in place for controlling access and egress to the school. Require all visitors to do not have authority to be in the school to sign in.
- Review traffic patterns, and where possible, keep cars, buses, and trucks away from school buildings.
- Review landscaping, and ensure buildings are not obscured by overgrowth of bushes or trees that could be used by persons to hide.

**DOE**

"As a former superintendent of the nation's seventh largest school district, I know the importance of emergency planning. The midst of a crisis is not the time to start figuring out who ought to do what. At that moment, everyone involved—from top to bottom—should know the drill and know each other."

—Secretary Rod Paige



### Introduction

Families trust schools to keep their children safe during the day. Thanks to the efforts of more than millions of teachers, principals, and staff across America, the majority of schools remain a safe haven for our nation's youth. The unfortunate reality is, however, that school districts in this country may be tested either directly or indirectly by a crisis of some kind at any time.

Natural disasters such as floods, earth quakes, fires, and tornadoes can strike a community with little or no warning. School shootings, therefore, are extremely rare but are horrific and chilling when they occur. The harrowing events of September 11 and subsequent anthrax scares have ushered in a new age of terrorism. Communities across the country are struggling to understand and avert acts of terror.

Children and youth rely on and find great comfort in the adults who protect them. Teachers and staff must know how to help their students through a crisis and return them home safely. Knowing what to do when faced with a crisis can be the difference between calm and chaos, between courage and fear, between life and death. There are thousands of fires in schools every year, yet there is minimal damage to life and property because staff and students are prepared. This preparedness needs to be extended to all risks schools face. Schools and districts need to be ready to handle crises, large and small, to keep our children and staff out of harm's way and ready to learn and teach.

The time to plan is now. If you do not have a crisis plan in place, develop one. If you have one, review it, update it, and practice your plan.

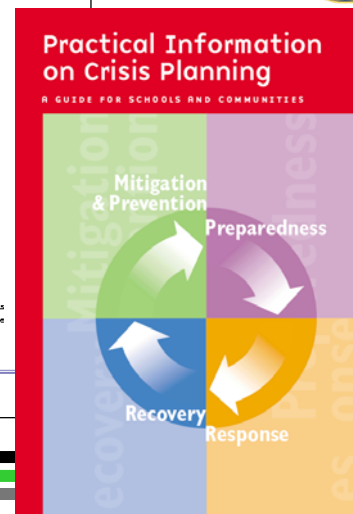
**DOD**

UFC 4-010-01  
31 July 2002

**UNIFIED FACILITIES CRITERIA (UFC)**

**DoD MINIMUM ANTITERRORISM STANDARDS FOR BUILDINGS**

**DHHS**



Guidance for

**Filtration and Air-Cleaning Systems to Protect Building Environments from Airborne Chemical, Biological, or Radiological Attacks**

Department of Health and Human Services  
Centers for Disease Control and Prevention  
National Institute for Occupational Safety and Health **NIOSH**

April 2003

# District Preparedness Plans



- School District Implementation Case Studies
  - State of Delaware
    - Web Solution
    - Drawing Management
  - Rock Hill, SC School District
    - Web Solution
    - Drawing Management
    - CCTV
    - Web CCTV Access